CLAIMS:

1. A method to restart at least an electromechanically actuated valve in at least a cylinder of an internal combustion engine, the method comprising:

detecting an error in the desired trajectory of said electromechanical valve during a combustion cycle of said engine; and

returning said electromechanical valve to said desired trajectory after detecting said error.

2. The method of Claim 1 wherein said electromechanical valve is an intake valve.

3. The method of Claim 1 wherein said electromechanical valve is an exhaust valve.

4. A method to restart at least an electromechanically actuated valve in at least a cylinder of an internal combustion engine, the method comprising:

processing a signal indicative of a valve position;

calculating an error between said signal and a predetermined valve position;

commanding said valve to a predetermined position when said error exceeds a predetermined amount;

synchronizing said valve operation with the position of said engine; and

operating said valve after said synchronization.

5. The method of Claim 4 wherein said signal is a discrete signal indicating open and closed valve positions.

6. The method of Claim 4 wherein said signal is a continuous signal indicating a valve position.

7. The method of Claim 4 wherein said predetermined position is an open position.

8. The method of Claim 4 wherein said predetermined position is a closed position.

9. The method of Claim 4 wherein said predetermined position is a middle position.

10. The method of Claim 4 wherein said synchronization is attempted after a predetermined number of cycles of said cylinder.

11. The method of Claim 4 wherein fuel is deactivated when said error exceeds a predetermined amount.

12. The method of claim 4 wherein spark is deactivated when said error exceeds a predetermined amount.

13. A method to restart at least an electromechanically actuated valve in at least a cylinder of an internal combustion engine, the method comprising:

processing a signal indicative of a valve position;

calculating an error between said signal and a predetermined valve position;

adjusting a base valve current based on said error;

commanding said valve to a predetermined position when said error exceeds a predetermined amount;

synchronizing said valve operation with the position of said engine; and

operating said valve after said synchronization.

14. The method of Claim 13 wherein said signal is a continuous signal indicating a valve position.

15. The method of Claim 13 wherein said predetermined position is an open position.

16. The method of Claim 13 wherein said predetermined position is a closed position.

17. The method of Claim 13 wherein said synchronization is attempted after a predetermined number of cycles of said cylinder.

18. The method of Claim 13 wherein said valve current adjustment increases current to said valve.

19. The method of Claim 13 wherein said valve current adjustment decreases current to said valve.

20. A method to restart at least an electromechanically actuated valve in at least a cylinder of an internal combustion engine, the method comprising:

processing a signal indicative of a valve position;

dividing said signal into at least two regions based on an engine position;

calculating an error between said signal and a predetermined valve position in each of said regions;

adjusting a base valve current in said regions based on said error in said regions;

commanding said valve to a predetermined position when said error in at least one region exceeds a predetermined amount;

synchronizing said valve operation with the position of said engine; and

operating said valve after said synchronization, based on a predetermined trajectory.

21. The method of Claim 20 wherein said signal is a discrete signal indicating open and closed valve positions.

22. The method of Claim 20 wherein said signal is a continuous signal indicating a valve position.

23. The method of Claim 20 wherein said predetermined position is a closed position.

24. The method of Claim 20 wherein said synchronization is attempted after a predetermined number of cycles of said cylinder.

25. The method of Claim 20 wherein said valve current adjustment increases current to said valve.

26. The method of Claim 20 wherein said regions are further based on a speed of said engine.

27. The method of Claim 20 wherein said regions are further based on a load of said engine.

28. The method of Claim 20 wherein said predetermined trajectory is further based on a speed of said engine.

29. The method of Claim 20 wherein said predetermined trajectory is further based on a load of said engine.

30. A method to adapt current in an electromechanically actuated valve in a cylinder of an internal combustion engine, the method comprising:

processing a signal indicative of a valve position;

dividing said signal into at least two regions based on an engine position;

calculating an error between said signal and a predetermined valve position in each of said regions;

adjusting a base valve current in said regions based on said error in said regions; and

adjusting said adjusted base valve current based on a number of on-trajectory valve operations.

31. A computer readable storage medium having stored data representing instructions executable by a computer to control an internal combustion engine of a vehicle, said storage medium comprising:

instructions for processing a signal indicative of a valve position;

calculating an error between said signal and a predetermined valve position;

commanding said valve to a predetermined position when said error exceeds a predetermined amount;

synchronizing said valve operation with the position of said engine; and

operating said valve after said synchronization.

32. A system to restart at least an electromechanically actuated valve in at least a cylinder of an internal combustion engine, the system comprising:

at least an electromechanically actuated valve;

a sensor to determine a position of said valve; and

a controller to process said signal, and to calculate an error between said signal and a predetermined valve position, and to command said valve to a predetermined position when said error exceeds a predetermined amount, and to synchronize said valve operation with the position of said engine, and operate said valve after said synchronization.